

We Claim:

1. A system for applying ultrasound energy to the thoracic cavity of an individual while being transported comprising

an electric signal generating machine sized to be transported with the individual, and

an ultrasound applicator adapted to be coupled to the electric signal generating machine to generate ultrasound energy, the ultrasound applicator being sized to be placed to the chest of the individual while being transported to transcutaneously apply ultrasound energy to the thoracic cavity.

2. A system according to claim 1

further including an assembly worn on the chest and affixed to the ultrasound applicator, to stabilize placement of the ultrasound applicator on the chest during application of ultrasound energy to the thoracic cavity.

3. A system according to claim 2

wherein the assembly includes a quick release mechanism.

4. A system according to claim 2

wherein the assembly includes a quick release material.

5. A system according to claim 2

wherein the assembly comprises a sling worn between the waist and shoulders.

6. A system according to claim 2

wherein the assembly includes a halter worn about the chest and shoulders.

7. A system according to claim 2

wherein the assembly includes spaced apart members that allows another treatment device to be placed on the chest near the ultrasound applicator.

8. A system according to claim 1

wherein the ultrasound applicator includes an ultrasound transducer to transcutaneously apply ultrasound energy to the thoracic cavity, the ultrasound transducer being sized to provide a power density not exceeding 3 watts/cm² at a maximum total power output of no greater than 200 watts operating at a fundamental therapeutic frequency not exceeding 500 kHz.

9. A system according to claim 1 wherein the electric signal generating machine is battery powered.

10. A system according to claim 1 wherein the ultrasound applicator includes an ultrasound transducer and a housing that includes a chamber to hold fluid about the ultrasound transducer.

11. A system according to claim 10 wherein the housing accommodates circulation of fluid about the ultrasound transducer.

12. A system according to claim 1 wherein the ultrasound applicator includes an ultrasound transducer and a housing carrying the ultrasound transducer that includes an ultrasound conducting interface.

13. A system according to claim 1 wherein the ultrasound applicator includes an ultrasound transducer and a housing carrying the ultrasound transducer that includes a contour-conforming interface with skin.

14. A system according to claim 1 wherein the ultrasound applicator includes an ultrasound transducer and a housing carrying the ultrasound transducer that includes a skirt that spaces the ultrasound transducer from contact with skin.

15. A system according to claim 1 wherein the ultrasound applicator includes an ultrasound transducer and a housing carrying the

ultrasound transducer that includes an ultrasound-
conducting membrane for contacting skin.

16. A system according to claim 1

wherein the ultrasound applicator includes an
ultrasound transducer and a housing carrying the
ultrasound transducer that includes a coupling assembly
to releasably couple the ultrasound transducer to the
external electric signal generating machine.

17. A system according to claim 1

wherein the coupling assembly includes a quick
coupling mechanism.

18. A system according to claim 1

wherein the electric signal generating machine
includes a controller to generate electrical signals to
operate the ultrasound applicator during a treatment
session to produce pulsed ultrasound energy.

19. A system according to claim 1

wherein the electric signal generating machine
includes a controller to generate electrical signals to
operate the ultrasound applicator during a treatment
session to produce continuous ultrasound energy.

20. A system according to claim 1

wherein the electric signal generating machine
includes a controller to generate different electrical
signals to operate the ultrasound applicator during a
treatment session to produce ultrasound energy in at
least two different modes, each mode comprising a
different frequency or a different output power level, or
both.

21. A system according to claim 20

wherein, in at least one of the modes, the
controller generates pulsed electrical signals.

22. A system according to claim 20

wherein, in at least one of the modes, the
controller generates continuous electrical signals.

23. A system according to claim 20 wherein, in at least one of the modes, the controller generates both pulsed and continuous electrical signals.

24. A system according to claim 23 wherein the controller generates both pulsed and continuous electrical signals in a prescribed sequence.

25. A system according to claim 23 wherein the controller generates both pulsed and continuous electrical signals in a random sequence.

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